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PART III.

Legislative Measures and Rules thereunder.

NOTIFICATION.

No. 444, dated Bangalore, 22nd August 1911.

In supersession of the rules prescribed under Sections 11 and 28 of the Mysore Mines Regulation, III of 1897, and published under Government Notification (Geological) No. 94-M., dated 9th December 1897, and subsequently amended, the Government of His Highness the Maharaja of Mysore, in exercise of the powers conferred on them by Sections 21 and 37 of the Mysore Mines Regulation, IV of 1906, are pleased to prescribe the following Rules:—

By Order,
E. W. WETHERELL,
Offg. Secy. to Govt.; Geol. Dept.

RULES PRESCRIBED UNDER SECTIONS 21 AND 37 OF THE MYSORE MINES REGULATION (IV OF 1906).

I. Preliminary.

1. In these Rules the word "Regulation" shall mean the Mysore Mines Regulation, IV of 1906, and all words defined in that Regulation shall have the same meaning in these Rules.

2. In these Rules—

(1) "Chief Inspector of Mines" means the Senior Inspector of Mines for the time being.

(2) "Chief Underground Agent" is the officer of the mine who is in charge of the whole of the underground portion thereof under the direction of the Superintendent.

(3) "Assistant Underground Agent", is an officer whose duty it is to assist the Chief Underground Agent.

(4) "Chief Engineer" is the officer in charge of all the machinery of the mine.

(5) "Assistant Engineer" is an officer whose duty it is to assist the Chief Engineer.

(6) "Mining Officer" includes the Superintendent, Chief Underground Agent, Chief Engineer, Accountant, Assayer and Cashier and their respective Assistants, and others holding posts of equal importance.

(7) "Underground Foreman" is a subordinate official of the mine to whom the detailed execution of part of the duties of a Chief or Assistant Underground Agent is delegated.

(8) "Timberman" means a miner whose duty it is to see that the fixing of timber is done in a proper and workman-like manner.

(9) "Workman" includes every person engaged in mining operations, and inferior in position to an Underground Foreman or Timberman.

(10) "Working place" means any place above or below ground where any mining operation is being carried on, and includes any winze, pass, way or other means of access thereto which is not used for general travelling purposes.

(11) "Working party" means a party of two or more men working at the same working place.

(12) "Blaster" means a workman employed in blasting operations, who prepares charges of explosives, charges holes and fires shots.

(13) "Mestri" means any workman in charge of a working party.

(14) "Banksman" means a workman stationed at the shaft top, specially appointed to superintend the raising and lowering of materials, tools and persons, and the transmission of signals between the shaft top and the Engine Driver and between the shaft top and the stations below ground.

(15) "Platman" means a workman specially appointed to superintend the loading and unloading of materials, tools and persons at any station below ground, and the transmission of signals between such station and the shaft top.

(16) "Contractor" is a person who contracts to drive, sink, or stope, clear dirt or do any other work for a consideration calculated on the work performed, and who employs workmen who are paid by him and are not in the direct employment of the company.

(17) "Contractor's Mestri" means any mestri in charge of a working party working under a contractor.

(18) The "Immediate Superior" of any person employed in a mine is the person, whether a Mining Officer or Foreman or Timberman or Contractor or Mestri, from whom he takes orders. In the case of a workman other than a mestri, it will generally be the person in charge of his working place.

(19) "Medical Officer" is the duly qualified person appointed by the Proprietor to have medical charge of the persons employed. Any person with the qualification required for an Assistant Surgeon in the Mysore Medical Service or any superior qualification shall be considered duly qualified for the purpose of these rules. If no Medical Officer shall be appointed by the Proprietor, the Civil or Assistant Surgeon of the District shall be the Medical Officer of the mine for the purpose of these rules.

(20) "Shaft" means any adit or vertical or inclined way or opening leading from the surface to the underground workings or from one portion of the underground workings to another, which is or might be used for winding, draining, travelling or ventilating purposes in connection with prospecting or mining operations.

(21) A "Sinking Shaft" is a shaft exclusively devoted to its depth being increased.

(22) "Winze" means a small underground shaft, either vertical or inclined.

(23) "Timber work" shall include masonry, iron-work or other means of securing ground.

(24) The expression "these rules" includes any general or special rules prescribed by the Government under Sections 21, 22 and 37 of the Mysore Mines Regulation, 1906.

II. Protection of the Surface.

3. Places where mining operations have caused large cracks and falls of earth on the surface, or where such are likely to occur, must be properly fenced in.

4. For the protection of public squares, roads, railways, cemeteries, rivers, water-rights, buildings and other property on the surface, the reefs, or other mineral deposits must be left intact for such depth below them and for such horizontal distance as an Inspector of Mines shall prescribe.

5. All excavations made contrary to the provisions of the preceding rule shall be immediately filled up with rock, sand or earth by the person or persons responsible for such excavations, failing which they shall be filled up by the Proprietor of the mine or by the Government at his expense.

6. The top and side entrances of all shafts that are more than 10 feet deep must be kept securely fenced or covered, except so far as may be necessary to allow of mining operations being efficiently carried on. The fence may be removed for necessary work if due precautions are taken.

7. When any shaft, trench or other excavation more than 10 feet deep, made in the course of mining operations, is or has been abandoned or the working thereof discontinued at whatever time the abandonment or discontinuance occurs, the Mining Proprietor and every other person interested in the land in which such excavation is situated shall, without delay, either fill up such shaft, trench or other excavation, or protect the same by a substantial stone barrier on all sides at least 3 feet, 6 inches high and 2 feet thick.

Provided that this rule may be relaxed with the consent of an Inspector of Mines or of the Deputy Commissioner of the District in the case of an open working of which no side has a steeper slope than 45°, and which is not considered to be dangerous.

8. In digging prospecting trenches the materials excavated must be used to form approximately equal ridges on all sides.

9. In open workings the overburden and all loose ground and materials shall be removed sufficiently far from the edge or otherwise, and made secure to prevent danger to persons employed in the mine.

10. The sides of open workings shall be sloped, stepped or secured in such a manner as to prevent danger from falls of material, and no side shall be cut or worked so that any portion of it projects or overhangs.

11. When any side of an excavation or open working, or portion thereof, which exceeds 10 feet in depth, has a slope which is steeper than 45°, the top of such side shall be protected by a suitable fence or barrier to prevent persons inadvertently falling into or entering the same.

12. Entrance to, or working in, any portion of an open working which is considered to be dangerous is prohibited, and access thereto shall be prevented as far as possible by efficient barriers.

13. Inadvertent access to water which contains poisonous or injurious chemicals used in mining operations must be prevented by fencing or other effectual means, and notices must be put up in suitable places warning persons against using such water.

III. Workmen.

14. Registers shall be kept at every mine of (1) the names of all persons directly employed by the Proprietor; (2) the names of all contractors with the number of persons they respectively employ; (3) the names of all platmen, mestris, blasters and engine drivers (if any) employed by contractors; (4) the number of females engaged in mining operations; (5) the number of persons below the age of twelve years engaged in mining operations.

The register shall also state whether such persons are employed above or below ground.

15. Every driver of a winding engine or locomotive and every blaster and underground mestri is required to hold a certificate in that capacity from an Inspector of Mines or one of his Assistants duly authorized to grant such certificates.

If in the opinion of an Inspector of Mines the holder of the certificate has been guilty of negligence or of misconduct in connection with the discharge of his duties, his certificate may be suspended or cancelled by an Inspector of Mines subject to confirmation by the Chief Inspector of Mines.

16. The following fees shall be paid by each applicant for a certificate under the preceding rule :—

	Rs.
Engine-driver, 1st class	15
Do 2nd class	5
Underground Mestri	5
Blaster	5

[NOTE.—Engine-drivers of the 2nd class are not permitted to raise and lower persons except with the special sanction of an Inspector of Mines.

Underground Mestris presenting themselves for examination may at the same time qualify as blasters without payment of any additional fee.]

17. Every applicant shall appear before an Inspector of Mines for examination and, after satisfying the latter as to his competency, shall be entitled to receive a certificate and a metal check marked with the registered number of the certificate.

Any applicant who fails to obtain a certificate may reappear for examination on payment of half the original fee prescribed by Rule 16.

18. Every certificate granted under these rules shall be kept in the possession of the Superintendent of the Mine at which the holder thereof is employed, and when the holder ceases to be employed at that Mine, the certificate shall be returned at once to the office of the Inspector of Mines, Oorgaum.

19. The metal check given with each certificate shall remain always in the possession of the certificate-holder and must not be transferred or disposed of in any way. The possession of these checks by any person other than the holder of the corresponding certificate is strictly prohibited, and any person finding one shall return it to the office of the Inspector of Mines, Oorgaum, without delay.

20. Any person who engages a workman who is new to the Mine must arrange that he is properly looked after until he is acquainted with the Mine.

21. Any workman sending a substitute in his place shall first obtain the permission of his immediate superior, and shall at the same time inform him whether the substitute is acquainted with the Mine. If he is not, the person so informed shall see that he is properly looked after. In the case of a substitute for a mestri or blaster, the consent of an Underground Agent; and in the case of a substitute for an engine-driver, the consent of an Engineer must be obtained.

22. At every mine a room must be provided, proportionate in size to the number of persons employed and likely to require such a room, where underground workmen can change and dry their clothes. Engine and boiler rooms must not be used for this purpose.

23. No person shall be employed underground or in attendance on machinery who is under the age of twelve years.

IV. Underground Workings.

24. Every working place where work is being carried on shall be placed under the charge of an Underground Foreman or Timberman in the direct employment of the Company or a certified mestri or blaster who shall be responsible for the safety of such place and must be present.

25. The person in charge of a working place or place where men are stationed or pass shall take all precautions to ascertain if the place is safe. If there is reason to suppose that there is any danger to persons working, stationed, or passing therein, he shall proceed at once to remove the source of danger, and if he is unable to do so himself, he shall inform an Underground Agent or other mining officer or (unless he is himself an Underground Foreman or Timberman) an Underground Foreman or Timberman of the fact as soon as possible, and in any case before leaving the mine. He shall, in the meantime, stop all work or access to such working place, except for the purpose of making the place safe or saving life. A Foreman or Timberman who receives information, under this rule, of danger to a working place shall be then considered in charge of such working place.

26. Every working place and every place where persons are stationed or pass shall be inspected at least once every day, when work goes on there, during the morning shift, and as far as practicable at least once a week in each of the other shifts by an Underground Agent or Underground Foreman or Timberman who shall satisfy himself that the place is in a safe condition, and he shall report to the Superintendent any case of serious neglect on the part of the person in charge.

27. The examination under the above rules of any shaft by which men enter or leave a mine must be made by an Underground Agent or specially selected Underground Foreman, or Timberman, and the result of one such examination in every week must be entered in a book to be kept on the mine.

28. All shafts in use and all underground workings in which the ground is not sufficiently firm must be made secure with suitable timber work, and such timber work must be renewed as often as necessary to ensure the safety of the workmen, and until so secured or renewed no person shall travel or work therein, except for the purpose of making the place secure. When it is absolutely necessary to work below ground suspected to be unsafe which cannot be removed or permanently timbered at once, temporary supports shall, where practicable, be employed.

29. In timbering a shaft care shall be taken that the wood employed in places where the ground is dry shall not be of an easily inflammable nature, and suitable means shall be provided for checking any outbreak of fire.

30. Where a place is likely to contain a dangerous accumulation of water, a working approaching it shall not at any point within 40 yards exceed 8 feet in width, and 8 feet in height, and there shall be constantly kept at a sufficient distance, not being less than 5 feet, 6 inches, in advance, at least one bore-hole near the centre of the working and sufficient flank bore-holes on each side.

31. In all underground mining operations, the ground on the inside of the boundary lines must be left intact for a width of 6 feet from such boundaries, but the working, cutting through or removing these boundary pillars is allowed by agreement between the Proprietors of the adjoining mines.

32. An underground workman commencing work shall proceed to his working place by the recognized travelling road, and shall not without due cause stop or loiter on the way. On leaving work he shall again proceed to leave the mine as directly as possible along the recognized travelling road.

33. A workman having reached his working place shall commence work under the direction of his mestri and shall not leave the working place until the end of his shift without permission of his mestri.

34. Every mestri or other person in charge of a working party shall see that none of the workmen forming the party leave the working place without his permission. He shall report to an Underground Foreman any workman so leaving without permission.

35. Every mestri or other person in charge of a working place shall see that no other person except those workmen who are on duty at the said working place remain in or at the place, and shall report to an Underground Foreman any unauthorized person so doing.

V. Prevention of Falls of Things and Persons.

36. Tools, wood, stones, or any other loose articles shall not be put down or allowed to remain in such a position in or near shafts or winzes, or openings into stopes where work is going on, as may result in their falling into them. When a shaft, winze, rise, shoot or stope leads directly into a travelling road or place where persons are stationed or at work, the traffic at such places must be guarded against danger from falling articles.

37. Every opening into a shaft, winze, shoot, or sliding hole, and any opening into a stope more than 10 feet deep below a drive, and other dangerous openings shall be provided with a barrier or cover in order to prevent persons or things from falling into them; the barrier or cover may be temporarily removed when necessary, provided proper precautions are taken to prevent danger to persons.

38. No person shall cast any material down any shoot, pass, stope or other place until he has made himself sure that no person is in the way.

39. Men engaged in sinking or in repairing any portion of a shaft must be protected by a suitable covering from objects falling from above. The ladder-way may form part of such covering.

VI. Shafts and Outlets.

40. No Proprietor, Agent, or Superintendent of a mine shall employ any person in a mine, or permit any person to be in a mine for the purpose of employment therein, unless—

(*a*) There are at least two shafts or outlets with which all the underground workings of the mine have communication, so that such shafts or outlets afford separate and efficient means of ingress and egress available to all persons employed in the mine, whether the shafts or outlets belong to the same mine or to more than one mine.

Provided also, that such shafts or outlets must not at any point be nearer to one another than 30 feet: and that there is between two such shafts or outlets, a communication in the mine not less than 4 feet high and 4 feet wide, and that sufficient means of ingress and egress are provided at each shaft.

41. The provisions of Rule 40 shall not apply—

(1) to any shaft which is actually being sunk;

(2) to any work for the purpose of opening up communication; or

(3) to any work for the purpose of opening out the mine or proving or searching for minerals which does not continue for more than one year, or does not extend for more than 50 feet from the shaft.

42. The provisions of these rules shall also not apply—

(1) to any other work for the purpose of opening out the mine or proving or searching for minerals;

(2) in case of an accident to a shaft;

(3) if the mineral would not repay the cost of a second shaft;

(4) in other cases where the circumstances of the case would render the provision of two shafts not reasonably practicable and where the rock is firm and there is no reason to apprehend danger from water or noxious gases.

Provided that the consent of an Inspector of Mines is previously obtained.

43. Where there is only one shaft and it exceeds 100 feet in depth and is not merely a sinking shaft, it shall be provided both with ladders and with other means of raising and lowering men.

VII. Inclines.

44. Every underground plane on which persons travel on foot, which is self-acting (that is to say, the motive power is the weight of the load in the waggons), or worked by an engine, windlass or gin, shall be provided (if exceeding 30 yards in length) with some proper means of communicating distinct and definite signals between the stopping places and the ends of the plane, and shall be provided in every case with sufficient man-holes or places of refuge at intervals of not more than 20 yards. No person shall be allowed to travel on foot on any such plane, if there is not room for a person to stand between the tracks and one of the walls.

45. Every man-hole and space for a place of refuge shall be constantly kept clear and no person shall place anything in a man-hole or such space so as to prevent access thereto.

VIII. Winding Generally.

46. Windlasses, whims and whips in use at shafts and winzes shall be provided with a stopper, lynch-peg or other reliable holder.

47. The connection between the rope and the bucket, skip or other conveyance must be of such character that no accidental disconnection can take place, and care must be taken that the hooking on and off of buckets is done without danger to the workmen.

48. Before an unguided bucket, or other conveyance, is raised or lowered it must be steadied under the supervision of the workman in charge. Vertical shafts exceeding one hundred feet in depth shall be provided with guides for buckets, unless exempted in writing by an Inspector of Mines.

49. In hoisting, the bucket, skip or other receptacle shall not be filled to such a height that any of the contents can fall out, and in no case above the level of the brim.

50. In hoisting or lowering timber, tools, etc., ends projecting above the top of the cage, skip or bucket must be securely fastened to the rope or bow. If a detaching hook is employed between the rope and the conveyance, care must be taken to secure it to any material which may project above it.

51. Entering any section of a winding compartment of a shaft while winding is going on in that section is prohibited except in cases of necessity.

52. When winding is effected by means of an engine, each drum must be provided with an adequate brake so arranged that it can be easily manipulated by the engine-driver when standing at the levers controlling the engine.

53. Ropes used for winding must be in good condition and of good quality and manufacture. The wires used in the construction of the ropes shall be of sizes suitable for use with the sheaves and drums fitted.

54. The rope shall be securely fastened to the drum, and there shall be at least two turns of rope on the drum when the cage, skip or bucket is at its lowest point in the shaft.

55. Whether detaching hooks for releasing the rope and hanging up the cage or skip in case of an overwind are provided or not, the runners shall be sprung or provided with 'dogs' or other device for holding up the cage or skip.

56. The brakes, rope, shackle and all other parts of the winding gear shall be carefully examined once in every twenty-four hours by a competent person specially appointed for the purpose, and a report of every such examination shall be entered forthwith in a book provided for the purpose. An Inspector of Mines shall have power to exempt small winding gears and hoists from the provisions of this rule.

57. (*a*) A Register shall be kept at every mine in which the following particulars (obtained from the makers) of all new winding ropes shall be entered in ink and certified to by the Superintendent. Each rope, as soon as received, shall be given a serial number in the Register.

Particulars—

Name and address of manufacturer.
Date of manufacture.
Date of receipt at mine.
Length of rope in feet.
Diameter and circumference of rope in inches, or (in the case of flat ropes) width and thickness of rope in inches.
Weight per foot in lbs.

Construction of rope—

Number of strands.
Class of core.
Character of 'lay,' etc.

Construction of strands—

Number of wires in strand.
Diameter of wires (decimals of an inch).
Class of core.
Class of steel of which wire is made.
Breaking stress of steel of which wire is made (tons of 2,000 lbs. per square inch).
Breaking stress of rope (tons of 2,000 lbs.)

(*b*) A Rope Record Book shall be kept at every mine, in which the following particulars of all ropes in use on winding gears which have not been exempted from the provisions of Rule 56, shall be entered in ink, each entry being signed by the person responsible for the examination of the rope.

Particulars—

Name of shaft at which rope is in use.
Compartment in which rope is in use.
Serial number of rope in Register.
Whether rope is new or, if not, reference to previous record.
Date on which rope is put on.
Dates of shortening and number of feet removed.
Dates of recapping.
Dates of turning end for end.
Dates of tests after shortening (if any).
Breaking stress of wires at these tests.
Dates when rope taken off.

IX. Special Rules for the Raising or Lowering of Persons.

58. No winding plant shall be used for raising and lowering persons unless permission, in writing, has been obtained from an Inspector of Mines. Before giving his permission the Inspector of Mines shall satisfy himself that the provisions of the Rules have been duly and reasonably complied with, not only in regard to the winding plant proper, but also in regard to the head gear, shaft, runners, cages or other conveyances, landing arrangements and signals; and that the condition of the same is satisfactory.

59. The head gear shall be of such height and construction that the cage or other conveyance can travel freely for a height of at least twenty-five feet above its position at the surface landing stage for persons.

60. Every winding plant used for raising and lowering persons shall be provided with a reliable depth indicator, plainly visible to the engine-driver, which shows the correct position of the cage or other conveyance in the shaft, and which, in the case of shafts exceeding three hundred feet in depth, will ring a bell in the engine room when the ascending conveyance is sixty feet below the collar of the shaft.

61. Every cage or other conveyance used in a vertical or steeply inclined shaft shall be provided with a roof or top cover and with proper safety catches where practicable. Cage entrances shall be provided with doors designed to prevent any portion of the body of any person travelling therein from coming in contact with the sides of the shaft. The doors shall be constructed so that they cannot open outwards, and shall be provided with a latch or other fastening to prevent them opening of themselves.

62. Rules 58, 59 and 60 shall not apply to sinking or prospecting shafts not exceeding 200 feet in depth.

63. The maximum number of persons allowed to travel in a cage or other conveyance shall be fixed by an Inspector of Mines, and shall be kept posted up at each landing place.

64. Every person who travels in a cage or other conveyance shall ride in it and not outside or on the edge. This does not apply to a person who is slowly lowered or raised for the purpose of examining the shaft.

65. At any shaft where the winding plant is not provided with a suitable device for preventing overwinding, the cage or other conveyance shall not be hoisted at a speed exceeding two hundred and fifty feet per minute when it is within sixty feet of the collar of the shaft.

66. Whilst persons are riding in a shaft, the winding of rock or other material must be discontinued, except where a separate engine is used for winding persons.

67. No person shall travel in any cage, skip or bucket with any heavy articles, especially drills or other tools. This rule shall not apply to persons specially authorized to travel with, and distribute, such articles, nor to persons in charge of underground works, sinkers, or workmen employed in repairing the shaft.

68. In the case of cages or other conveyances which do not conform to the rules regarding the winding of persons, the Superintendent may obtain the special sanction of an Inspector of Mines to permit mining officers and officials, certificated mestris and blasters and sinkers, and workmen engaged in repairing the shaft to ride therein, provided all available precautions are taken.

69. After any stoppage of winding for repairs or for any other purpose exceeding two hours' duration, the cage or other conveyance must be run a complete trip up and down the working portion of the shaft before any person is allowed to ride therein.

70. Where winding of persons in accordance with the foregoing rules is permitted, the following rules must be strictly observed:—

(*a*) One, or more than one, competent person, specially deputed by the Superintendent for the purpose, and whose name or names must be registered by him in a record book, termed the Machinery Record Book, shall carefully examine—

(1) every winding rope newly put on and its attachments to the drum and cage or other conveyance, and the same shall be used for the transport of persons

only after the conveyance, loaded to the full authorized extent, has been run two complete trips up and down the working portions of the shaft;

(2) at least once a week, the guides and the winding compartments generally the signalling arrangements, and the external parts of the winding engine;

(3) at least once a year, the winding engine as to the working condition of the internal parts;

(4) at least once a month, the structure of the rope for the purpose of discovering the amount of deterioration of same. For the purpose of this examination, the rope must be thoroughly cleaned at selected places.

A true report of the result of every examination above mentioned shall be recorded without delay in the Machinery Record Book which must be kept at the mine specially for the purpose, and shall be signed by the person who made the inspection. Should, as the result of such examination, any weakness or defect be discovered by which life or limb may be endangered, the defect shall immediately be reported to the Superintendent, and remedied; and no person shall be lowered or raised until the defect is made good.

(*b*) Winding ropes shall not be used for raising and lowering persons when, owing to deterioration or from any other cause, the breaking stress has become reduced to below six times the maximum working load.

(*c*) So soon as a rope becomes defective, it shall no longer be used for the transport of persons, unless the damaged part be at the end, and be cut off.

(*d*) A rope out of which any defective portion has been cut and the ends again spliced, and ropes which have been previously in use in places beyond the Superintendent's control, shall not be used to raise or lower persons.

(*e*) At every mine, at least one spare rope, suitable for use in any shaft in which persons are raised and lowered, shall be kept in reserve.

(*f*) A single linked chain shall not be used for raising or lowering persons or for attaching the rope to the skip or cage, except with the sanction in writing of an Inspector of Mines.

X. Signals.

71. At all winding shafts, exceeding one hundred feet in depth, arrangements must be provided for transmitting distinct and definite signals from the various levels in use and the shaft top, and between the shaft top and the engine driver. Where persons are raised and lowered arrangements shall also be made for return signals.

72. The engine-driver shall not set the engine in motion without having received a definite signal to do so. Neither the engine-driver nor banksman shall act on any signal of the correctness of which he has any doubt, unless he believes it may possibly be the signal to stop.

73. The banksman shall not permit the cage, skip or bucket to be moved from any landing or filling place in the shaft unless he has received a signal from that place, and if persons are to be raised or lowered, has returned the same.

74. Only persons specially authorized by the Superintendent for the purpose are allowed to give signals.

75. The following signals must be uniformly adopted in all mines:—

"One"—meaning to stop.
"Two"—meaning to lower.
"Three"—meaning to raise.

Additional signals shall be sanctioned by the Superintendent, and must not interfere with the above code.

76. Notices explaining the meaning of all permanent signals must be kept posted up in the engine room, at the shaft top and at all signal stations below-ground.

XI. Ladder Ways.

77. In shafts having an inclination of more than 65° with the horizontal, platforms or sollars must be provided at intervals not exceeding 35 feet. The manhole in any sollar shall be placed behind the ladder leading up from such sollar whenever the inclination of the shaft exceeds 70° with the horizontal.

78. In shafts having an inclination exceeding 45°, but not exceeding 65°, with the horizontal, the sollars shall be placed at intervals of not more than 55 feet, measured along the underlie of the shaft.

79. No ladder shall have a steeper inclination than 80° with the horizontal, except under special circumstances and with the consent in writing of an Inspector of Mines. This consent shall not be necessary for the lowest 30 feet of a sinking shaft.

80. Ladders must be securely fixed to the timbering of the shaft, and maintained in proper repair. Except at sollars or resting places, ladders must be made continuous or without perceptible overlapping or break.

81. Ladders must project at least three feet above the shaft top and above every sollar or landing place in shafts, and other travelling ways or strong holdfasts must be provided at all such places in convenient positions.

82. Travelling on foot in any shafts or shaft compartments except those specially provided and equipped for this purpose is strictly prohibited, except for purposes of inspection or repair.

83. In shafts having an inclination steeper than 45°, any compartment which is used as a foot travelling way shall be closely fenced off from the other compartments. In shafts less steeply inclined than the above, the ladder way shall be sufficiently railed off to prevent persons inadvertently entering the adjoining compartments.

84. Carrying tools or other loose materials up or down a ladder way having an inclination steeper than 45° is prohibited except when absolutely necessary. When tools are carried in a ladder way they must be secured in a sling to the person carrying them.

XII. Ventilation, Lighting, etc.

85. Sufficient ventilation must be provided to render all working places and travelling roads in a mine, under ordinary circumstances, fit for working in, and as far as possible free from fumes, smoke, dust or noxious gases.

86. A working place shall not be deemed to be fit for working in if a candle will not burn erect when shielded from a draught.

87. All doors which are required to be kept shut for purposes of ventilation shall be made self-closing.

88. All holes drilled in dry ground must, as far as practicable, be kept moist to prevent the atmosphere being charged with dust.

89. Unauthorized entrance into abandoned or disused workings is prohibited and should, as far as possible, be prevented by boarding or otherwise. Underground works (especially shafts, sumps, winzes and rises) which have been unused for some time shall, before work is started, be examined with a light, and if the air is foul, no work shall be permitted there until the foulness has been removed.

90. Stationary lights shall be provided at all stations and other places in shafts which are for the time being in use, also in all places where pumps or other machinery or appliances are in motion, unless the same are fenced off so as to render it impossible for any one to come in contact with them inadvertently; and at night at all working places on surface.

91. Moving about without a light in any unilluminated part of the mine is prohibited.

92. The Superintendent shall make all necessary sanitary arrangements as shall be approved by the Medical Officer, and shall appoint some person or persons who shall be responsible that all surface and underground workings and spaces are constantly kept sanitarily clean. A supply of pure drinking water shall be provided underground at suitable and convenient places.

XIII. Explosives.

93. No explosives shall be stored in or about a mine except in accordance with the provision of the Mysore Explosives Regulation and Rules, or as provided for in Rules 94 to 105 hereunder.

94. A daily supply magazine may be placed in the neighbourhood of each shaft for the daily requirements of the mine. The position and construction of every such magazine shall be approved of by an Inspector of Mines, who shall determine the maximum amount of explosives—not exceeding 300 lbs.—to be stored therein. Blasting powder shall not be stored with high explosives, but must be kept in a separate compartment having a separate entrance. Detonators shall not be stored in a compartment with any other explosives.

95. The storage of explosives underground is prohibited, except in the following cases:—

(*a*) A small amount of explosives may be kept in boxes for unforeseen contingencies; each box must be securely made and kept locked, and may not contain except in cases coming under (*b*), more than half a pound of cartridges, six detonators and three yards of fuse. The detonators must be in a distinct compartment of the box, separated by a strong partition from the rest. No box shall be so placed that there is any risk of its being exploded or ignited by the explosion or ignition of any other box, or otherwise.

(*b*) When all the charges fired in a single shift are not fired at the same time, the explosives for the uncharged holes may be kept in the meantime at a safe distance. They must be placed in charge of some person responsible for them, where there is no risk of their being exploded or ignited.

(*c*) A magazine may in special cases be provided underground for storing the daily requirements of a mine or part of a mine in blasting materials, provided that the quantity of explosives of all kinds stored in such magazine shall not exceed an amount to be fixed by an Inspector of Mines, and provided that the magazine shall be placed at a sufficient distance from any portion of the mine in which work is going on or which is used as a thoroughfare, as will in the opinion of an Inspector of Mines prevent the risk of injury to any person from the explosion of the maximum amount of explosives allowed in the magazine, or from the fumes of the gases resulting from the combustion of such maximum amount, and provided that every precaution is adopted which an Inspector of Mines may require to be taken to prevent the explosion or ignition of such explosives and the injury to any person thereby. Detonators shall not be stored in a compartment containing or immediately adjoining one containing other explosives.

96. Explosives must be in their ordinary manufactured form and of good quality and as far as can be practically known in good condition when distributed for use. Only one kind of detonator shall, except with the permission of an Inspector of Mines, be used in the same mine. It shall be of sufficient power for every kind of explosive used.

97. No working place must be supplied with a greater quantity of explosive material than will probably suffice for the requirements of the shift.

98. A book must be kept to record the quantity of explosive material supplied to each contractor or blaster.

99. Explosives issued from the magazine shall be taken directly to the working place, and any unused explosives must be returned to the magazine near the shaft without any delay. Any one finding any explosive must take it at once to the nearest magazine.

100. The removal of explosives to any place not authorized by these rules, and the sale or purchase of explosives in the mine are strictly prohibited.

101. Explosives including fuse, when issued from the magazine, must be carried at all times in secure cases or canisters, and no case or canister may contain more than fifteen pounds of explosives.

102. Detonators must not be carried in the same case or canister with other explosives.

103. Explosives shall not be sent down in a bucket, skip or cage, unless there is a distinguishing mark attached to the bucket, skip or cage, or they are accom-

panied by some one who is responsible for them. If taken down by ladder, each case or canister must be securely fastened to the person carrying it.

104. All explosive material must be distributed, whether above or below ground, only by the person or persons appointed for that purpose by the Superintendent.

105. No fuse or explosives are allowed to be taken into the mine other than the brands specially authorized by the Superintendent.

XIV. Blasting.

106. All blasting operations shall be conducted by a blaster holding a blaster's certificate under Rule 15. In cases of emergency, a person who does not hold a blaster's certificate may be authorized to conduct blasting operations by the Superintendent or an Underground Agent who shall be responsible that such person is competent.

107. The blaster shall himself prepare the fuze, detonator and primer for use and shall charge every hole, but he may be assisted otherwise in the preparations of charges and in firing the shots by one or more competent assistants.

108. During the preparation of charges and the charging of holes, all lights must be kept at a safe distance, and smoking shall be strictly prohibited while explosives are being handled.

109. Every blaster must carry a knife in order to be able to cut a burning fuze, if necessary, and also a pair of pliers for crimping the detonator on to the fuze.

110. The fuze with its attached detonator shall, after being inserted in the primer cartridge, be securely fastened thereto by string or other suitable material so that it cannot be easily withdrawn from the cartridge. The fuze and detonator shall not be inserted in the primer until it is required for immediate use.

111. In charging or stemming holes the use of any iron or steel tool, scraper or rod is prohibited, and no explosive shall be forcibly pressed into a hole of insufficient size.

112. A wad of paper about one inch thick must be inserted immediately on top of the primer and below the tamping which shall be at least six inches deep. Only sand loosely filled in or soft clay lightly pressed home or water shall be used as tamping for any explosive requiring the use of a detonator.

113. Not more than eight holes, unless the fuzes are ignited by more than one person, in which case the number may be increased to twelve holes, shall be fired in one round in any drive, stope, end or shaft, or unless the charges are fired electrically, or unless the special permission of an Inspector of Mines has been obtained. No holes shall be charged except those which are to be fired in the next round, and all those which have been charged shall be fired in one round.

114. Blasting gelatine or other high explosive shall not be lighted in order to set fire to fuzes, but a small portion of such explosive may be attached to the end of a fuze to assist it to ignite.

115. Before any shots are fired, due warning shall be given in every direction by shouting the fire signal, and all approaches to the place where the shots are being fired shall be guarded. The blaster shall be responsible that no person is allowed to remain in, or to come into, dangerous proximity to the shots.

116. Whenever any working place approaches another so closely that any further blasting will reduce the intervening rock to a thickness of six feet or less, such further blasting must be conducted from one working place only at any one time. The Underground Agent in charge shall be responsible that the working parties are duly warned of the near approach of the two places, and the blaster in charge of the operations in the one place shall take steps to ensure that no person remains in the other place while shots are being fired.

117. The number of shots which explode must be counted by at least two persons, one of whom shall be the blaster. Unless both are certain that all the charges have exploded, the working place must not be re-entered for at least thirty minutes after the first explosion.

118. If all the charges have exploded properly or if they have been fired electrically, the working place may be re-entered as soon as it is sufficiently clear of fumes: provided that in the case of electric firing the source of electricity shall have first been disconnected.

119. After blasting has taken place, the blaster, or person in charge of the working place shall be the first to re-enter the place, and until he has pronounced it to be safe and sufficiently free from fumes he shall not permit any other person to enter except for the purpose of making it safe.

120. In clearing the stuff broken by the blast, loose unexploded cartridges, detonators, etc., must be carefully looked for and, if found, removed at once by the blaster or mestri in charge to a safe place.

121. Before drilling is commenced all loose rock must be removed from the working faces, and if any sockets or portions of holes which have not broken are found, they shall be securely plugged with wooden plugs, of which a supply shall be provided.

122. In the event of a mis-fire (or charge failing to explode properly) having occurred or being suspected, the blaster himself must be the first to re-enter the working place. He shall search for the mis-fire and, if necessary, may have the place cleaned up for this purpose; but he shall permit no other work.

123. As soon as the mis-fire has been found the blaster shall refire it without delay, for which purpose he shall insert a fresh primer with detonator and fuze in the hole. If necessary, the tamping may be gently removed with a wooden or copper scraper; but not the paper wad.

124. If the mis-fire cannot be found or reblasted, the blaster shall, before leaving the mine, inform the mestri in charge, of the next shift, and also an Underground Agent, Foreman or Timberman who shall then be considered to be in charge of the working place. The blaster shall, before leaving the mine, cause a report of every mis-fire to be entered in a book kept for the purpose at the shaft top. Unless the mestri is present at the working place, the blaster shall, before leaving, post a man to prevent access thereto, and warn persons of the existence of the mis-fire.

125. The mestri in charge of the next shift may have the place cleaned up and made secure, but no drilling shall be permitted until the mis-fire has been reblasted, or until the place has been inspected by an Underground Agent, Foreman or Timberman and instructions obtained from him as to the course to be followed. The Agent, Foreman or Timberman shall take steps to ensure that his instructions are properly carried out, and both he and the mestri shall be held responsible for this being done.

126. No portion of a charge shall be withdrawn from a hole either before or after blasting. The deepening of or tampering with holes or portions of holes, in which explosives have once been charged, is strictly prohibited.

127. The person in charge of the working place shall point out the position and direction of every new hole to be drilled, and shall be responsible that the drillers do not deviate therefrom. The greatest care shall be taken that no new hole shall be bored in such a direction that it can come in dangerous proximity to any old hole or socket in which explosives have previously been charged.

XV. Machinery.

128. All steam-boilers, compressed air-receivers and driving-gear must be in the personal charge of competent men appointed by the Chief Engineer. Every steam-boiler and air-receiver shall have attached to it a proper safety-valve and steam gauge and water-gauge or air-gauge, and shall be inspected by an Engineer once a week at least.

129. (*a*) Before a boiler or air-receiver is cased in or put in commission, it shall be subjected to hydraulic test by the Chief Engineer or a competent person appointed by him. The test shall be repeated after any important renewals or repairs, and in any case at least once in every twelve months in the case of a boiler, and once in three years in the case of an air-receiver. A record of every such test shall be entered in books kept for the purpose.

(*b*) In the case of an air-receiver the hydraulic pressure shall be 1½ times the maximum working pressure permitted.

(*c*) In the case of a boiler the hydraulic pressure shall be twice the maximum working pressure allowed when the latter does not exceed 75 lbs. per square inch, and at least 75 lbs. per square inch above the maximum working pressure in other cases.

(*d*) The working pressure shall be measured as the pressure in excess of that due to the atmosphere.

130. A notice shall be posted in every engine-house specifying the highest pressure to which the steam or air in every boiler or receiver, in or adjoining such engine-house may be raised, and the minimum height of water allowable in each boiler shall be clearly marked on the water gauge and on the boiler shell.

131. The weight of every safety-valve shall be fixed on the lever so that it cannot be inadvertently shifted so as to increase the pressure.

132. Every boiler shall be cleaned out and examined internally at least once in every twelve months, and a record shall be kept at the office of the mine of the condition at the time of every such cleaning.

133. All exposed parts of machinery, which are dangerous when in motion, must be railed or partitioned off in such a manner that no accident can occur except through carelessness.

134. Every person in charge of any boiler, engine or other appliance, apparatus or machine shall see that it is in proper condition before commencing work, and if there is any defect shall remedy the same or report it to a Chief or Assistant Engineer; he must see that boilers are kept properly supplied with water, that no extra weights of any kind are added to the safety-valves of boilers and receivers, and that the allowed pressure of steam or air is not exceeded. If anything occurs to prevent a boiler being adequately supplied with water, he shall damp or draw the fire without delay, and in case of any dangerous defect shall stop work until it is remedied.

135. Engine-drivers and firemen are not allowed to work longer than the ordinary shift prescribed at a mine, unless it is absolutely necessary. If the driver or fireman of a winding engine shall work longer than the prescribed shift, an entry of the fact must be made in a book kept for the purpose. During his shift an engine-driver or fireman shall not leave his post except when absolutely necessary, nor without leaving some person in charge. He shall not allow any one else to handle the engine unless with the order or permission of the Chief, or an Assistant, Engineer, or in case of emergency.

136. In the case of an engine-driver of a winding engine in which persons are raised or lowered, the shift shall not exceed eight hours in twenty-four, and in the case of an engine-driver of any other winding engine, shall not exceed ten hours, except in the case of small mines not exceeding 400 feet deep, or with the permission of an Inspector of Mines.

137. The repairing, adjusting, cleaning or lubricating of machinery in motion shall not be permitted when there is a risk of personal injury.

138. Shipping and unshipping driving belts while the machinery is in motion is prohibited, unless a satisfactory mechanical appliance is provided for the purpose. This shall not apply to the customary shifting of light belts on the coned pulleys of machine tools.

XVI. Electrical Plant and Fittings.

139. All Electrical Apparatus and Conductors shall be sufficient in size and power for the work they may be called upon to do, and, so far as is reasonably practicable, efficiently covered or safeguarded, and so installed, worked and maintained as to reduce the danger through accidental shock or fire to a minimum; and shall be of such construction and so worked that the rise in temperature, caused by ordinary working, will not injure the insulating materials.

140. All metallic covers, armouring of cables, other than trailing cables, and the frames and bed-plates of Transformers and motors, other than portable motors, shall, as far as is reasonably practicable, be efficiently earthed when the pressure at the terminals, where the electricity is used, exceeds 250 volts.

141. Main and distribution switch and fuse boards must be made of incombustible insulating materials, and be fixed in as dry a situation as practicable.

142. Every sub-circuit must be protected in one of the three following alternative methods:—

(*a*) By an automatic maximum cut-out on each pole;

(*b*) By a detachable fuse on each pole, constructed in such a manner that it can be removed from a live circuit with the minimum risk of shock;

(*c*) By a switch and fuse on each pole.

143. Fire buckets, filled with clean, dry sand, shall be kept in electrical machine rooms, ready for immediate use in extinguishing fires.

144. Gloves and mats or shoes of India rubber, or other non-conducting material, shall be supplied and used where the live parts of switches or machines, working at any pressure above 250 volts, have to be handled for the purpose of adjustment.

145. No person shall wilfully damage, interfere with, or without proper authority remove or render useless, any electric line, or any machine, apparatus or part thereof, used in connection with the supply or use of electricity.

146. Where a Generating Station, under the control of the Mining Company on whose property it is situated, is not within 400 yards of any shaft down which the current is led, an efficiently enclosed locked switch box or a switch-house shall be provided near the pit-mouth, for the cutting off the supply of electricity to the underground portions of the Mine.

147. Every transmission line, carried overhead, on the surface, must be efficiently supported upon insulators, and clear of traffic, and provided with efficient lightning arrestors.

148. All terminals and live metal on machines or switchboards working at a pressure exceeding 250 volts underground, or 600 volts on surface shall, where practicable, be protected with insulating covers, or metal covers connected to earth, when situated in any position in which it is easily possible for a person to come in contact with them.

149. No unauthorized person shall enter a motor room, or interfere with the working of any motor or apparatus connected therewith. Suitable screens, guards or partitions of non-inflammable material shall be fixed so as to prevent the space at the back of transformers and high tension switchboards being used as passage ways.

150. Unless fixed, as far as is reasonably practicable, out of reach of injury, all conductors, other than armoured cables, must further be protected by a suitable covering. Where lead-covered cable is used, the lead shall be earthed and electrically continuous throughout.

Where main or other roads are being repaired or blasting is being carried out, suitable temporary protection must be used, so that the cables are reasonably protected from damage.

151. The fixing with metallic fastenings of cables and wires, which are not provided with metallic coverings, to walls or timbers, is prohibited.

152. Fuses and automatic cut-outs shall be so constructed as effectually to interrupt the current when a short circuit occurs. Fuses shall be adjusted or replaced only by an authorized person.

153. All live parts of switches, fuses and cut-outs, not in machine rooms or compartments specially arranged for the purpose, must be covered.

154. Where unarmoured cables or wires pass through metal frames or into boxes, transformers or motor casings, the holes must be substantially bushed with insulating bushes.

155. In all machine rooms and other places underground, where a failure of electric light is likely to cause danger, lamps or other proper lights shall be kept for use in the event of such failure.

156. Instructions shall be posted up in one or more suitable places on every mine, containing directions as to the restoration of persons suffering from electric shock.

157. All proper precautions must be taken to prevent electric signal and telephone wires from coming into contact with other electric conductors, whether insulated or not.

158. Notwithstanding anything contained in these rules, any electrical plant or apparatus installed or in use before the coming into force of these rules, may be continued in use unless an Inspector of Mines shall otherwise direct, or subject to any conditions affecting safety that he may prescribe.

159. Under special circumstances or in case of emergency, an Inspector of Mines shall have power to grant exemption from the requirements of any of the rules in this section upon such conditions as he may consider desirable or necessary.

XVII. Accidents, Ambulance, etc.

160. Whenever an accident occurs at a mine which results in the death of, or serious injury to, any person, the Superintendent shall at once send notice thereof in writing to an Inspector of Mines, stating fully all particulars regarding such accident, in accordance with the form in the schedule to these rules. The notice shall be accompanied or followed by a certificate from the Medical Officer regarding the nature of injury or cause of death. Where practicable, a brief notice of the accident shall also be sent by telegraph or telephone.

161. By serious injury is meant an injury which results, or is likely to result, in total or partial loss of, or permanent damage to, any limb or organ, fracture of any of the larger bones (including the bones of the skull), dislocation of the hip or knee, great loss of blood, internal bleeding or prolonged unconsciousness, or which may be declared to be serious by the Medical Officer.

162. If death results from the effects of an accident, whether such death occurs at the time of the accident or subsequently, the Superintendent shall send notice of the same forthwith to the nearest Magistrate or Police Officer as well as to the Inspector of Mines.

163. The place where an accident involving the death of, or serious injury to, any person has occurred shall be left untouched after removal of the injured person or persons until it has been examined by an Inspector of Mines or until the expiry of forty-eight hours, unless the stoppage of work at that place would seriously impede the work of the rest of the mine, or unless the consent of the Inspector of Mines to the resumption of work has been obtained.

In the event of the Inspector of Mines being unable to proceed to the scene of the accident himself or to send a qualified deputy, he shall, if he considers an enquiry to be necessary, inform the nearest Magistrate, who shall thereupon cause an investigation to be made on the spot into the cause of the accident. A copy of the evidence taken at such investigation shall be forwarded to the Inspector of Mines.

164. In every case in which death has resulted from an accident, and in all cases resulting in serious personal injury, in which any wilful or negligent breach of these rules has been disclosed, the Inspector of Mines shall furnish a report of his investigation to the nearest resident Magistrate, who shall thereupon make such further investigation or take such action as he may consider necessary. The Magistrate shall inform the Inspector of Mines of the date of such further investigation or action, and the latter shall be at liberty to appear and examine any witness.

165. Whether personal injury is caused or not, every accident occurring under the following classification shall be reported without delay to the Inspector of Mines:—

(1) Engine running out of control;

(2) Fracture of any essential part of winding engine, crank shaft, couplings, bearings, gearings, clutch, drums, or drum shaft;

(3) Fracture of winding rope or of its attachment to skip, cage, or drum;

(4) Fracture of pit-head sheave or axle or bearings of same;

(5) Failure of efficiency of brake;

(6) Failure of safety catch to act when required;

(7) Failure of device for prevention of overwinding or of detaching hook to act when required;

(8) Overwinding of cage or skip;

(9) Bursting of anything containing steam, compressed air or other substance at high pressure;

and a record shall be kept at every mine of all cases of jamming or derailment of skip and cages.

166. The proprietor shall see that the following medical provision is made for persons employed in mining operations: —

(1) If the number of persons so employed exceeds 1,500, one qualified Medical Officer residing within three miles;

(2) If the number of persons so employed exceeds 250 and does not exceed 1,500, one qualified Medical Officer residing within ten miles, and if the Medical Officer does not reside within three miles, then in addition one trained Hospital Assistant within three miles.

(3) If the number of persons so employed exceeds 50 but does not exceed 250, then one trained Hospital Assistant within five miles.

These distances will be measured from any part of the mine where more than 50 persons are employed.

167. If any Medical Officer who is not employed by the Proprietor shall attend on any person employed in mining operations, the Proprietor shall pay such amount for his services as the Senior Surgeon in Mysore shall direct.

168. In order to render immediate assistance in cases of injuries such as broken bones, wounds, bleeding, contusion, scalding and suffocation, there must be ready at hand at every mine all such necessary articles and medicines as the Medical Officer shall direct, and also an ambulance for the removal of injured persons; and so far as possible every person in charge of any work below ground shall be acquainted with the means of giving first aid to persons injured.

169. Every workman receiving any personal injury in any mining operations shall, before leaving the mine, report the same to one of the Mining Officers or the watchman at the top of a shaft or to his immediate superior; and any person to whom such report is made shall, as soon as possible, communicate the same to the Superintendent.

XVIII. Mine Plans.

170. A general plan, made by a competent surveyor, of the land, which is in the possession of the Mining Proprietor for mining purposes or over which he holds any mining rights, to a distance of 600 feet from any point where mining operations are or have been carried on, but not beyond the limits of such land, must be kept at the mine, and be made up at least every four months.

171. The general plan must show the Government survey marks (if any), the boundaries of the land, the outcrops, as well as the actual strike and dip of the reefs or other mineral deposits so far as known, all open surface workings, shaft openings, bore-holes, water-furrows, reservoirs, tailings-sites, public roads and railways and the principal buildings and sites of mining and metallurgical plant. It must also show the geographical meridian.

172. Besides the general plan referred to above, the Superintendent must keep in the office of the mine an underground working plan and section or sections showing clearly all the workings surveyed up to within four months from date.

173. The underground plans and sections must in particular show clearly all shafts, bore-holes, drives, crosscuts, winzes, rises, excavations (stoped ground) and any tunnels and passages connected therewith, and the position of all permanent winding gear, pumps, ventilating fans, brattices and doors for regulating ventilation, and all underground bench marks, and stations of the underground survey, and in addition thereto the vertical depth of bore-holes, the depth at which the mineral deposits have been intersected, the general strike of the reefs or mineral deposits, with their dips at different points, and the dislocations of the strata.

174. All underground plans must be on the scale of 30 or 60 feet to one inch.

175. All bench marks or stations of the underground surveys must be properly marked with holes and plugs, and care taken to preserve them in view of subsequent surveys.

176. The plottings of every survey must be made from a line or lines representing on the plan the true geographical meridian.

177. In case of a mine or any considerable part of it being intentionally abandoned, the general and underground plans and underground sections must first be completed up to date, and the same or exact copies thereof must be sent to the Chief Inspector of Mines within two months of such abandonment.

178. All underground workings must, when it is possible, first be surveyed before being allowed to become inaccessible.

179. Any Proprietor, Agent or Superintendent or other person engaged in mining operations, who wilfully withholds any portion of a mine plan, or conceals any part of the workings, or knowingly allows the mine plans to be incorrect, shall be guilty of a breach of these rules.

180. A true copy, on mounted paper or tracing cloth, of the general plan and of every underground plan or section, referred to in Rules 170 and 172, shall be deposited with the Chief Inspector of Mines, and the said copies shall be brought up to date once every year by the Superintendent.

For this purpose the said copies may be obtained by the Superintendent from the Chief Inspector of Mines any time subsequent to the 31st of December, and shall be returned to the Chief Inspector of Mines not later than the 1st of June following.

XIX. Government Returns and Inspections.

181. The Superintendent of a Mine shall furnish to the Chief Inspector of Mines a statement showing the quantities of ore obtained and treated, and the quantity of metal or other finished products obtained, and other returns and statistics in such form and at such time as may be prescribed by the Government.

182. Where any working is commenced for the purpose of opening a mine, or where the working of a mine is temporarily or permanently discontinued or abandoned, or where the working of a mine is recommenced after any such discontinuance or abandonment, the Proprietor or his Agent or Superintendent shall immediately give written notice thereof to the Chief Inspector of Mines.

183. The Proprietor or his Agent or Superintendent shall, without delay, furnish the Chief Inspector of Mines with the following information :—

(1) Name of Mine,
(2) Name and address of Proprietor,
(3) Name and address of Agent or Superintendent;

and shall likewise give notice of any change in their names or addresses within three days of such change.

184. In case of the abandonment of a mine, the Proprietor, at the time of such abandonment, shall continue to be responsible for the carrying out of the rules regarding the protection of the surface under Section III, the furnishing of plans under Section XVIII, and the sending in of returns under Section XIX, until such rules have been complied with.

Upon the Chief Inspector of Mines being satisfied that such rules have been duly complied with, he shall issue a certificate to that effect, and the Proprietor shall thereupon be relieved from all further responsibilities.

185. An Inspector of Mines or his authorized representative shall at all reasonable times have access to the plans and sections in order to examine and inspect them, take copies thereof, and make extracts therefrom; and shall be entitled to enter upon any part of the mine above or below ground, and inspect and examine the state and condition thereof, and of the mines and buildings and mining and metallurgical plant therein or thereon, and the mode in which operations are carried on, and hold enquiries as to accidents; but so far as possible in such a manner as not to impede or obstruct the working of the mine, and the Proprietor, Agent and Superintendent shall, with proper persons employed in the mine and acquainted with mining and metallurgical operations and with the engines, machinery and apparatus and other mining and metallurgical plant upon or within the mine effectually assist in the conduct of every such inspection or examination, affording all information required therefor, and producing any books or records required to be maintained under these rules.

186. Notice shall be given to the Chief Inspector of Mines if any working approaches within a horizontal distance of a railway equal to twice its depth below the surface, or to 500 feet, whichever is less.

187. If any mine is worked in a manner which, though not expressly forbidden by the provisions of these rules, is nevertheless dangerous, an Inspector of Mines may require the matter to be remedied, and the representative of such mine shall comply with such requisition, or else submit the matter to arbitration.

188. An Inspector of Mines is also entitled to take, or cause to be taken, such samples of ore, quartz or other minerals from any reefs, beds or deposits or from any intermediate or final products extracted, obtained or produced in the course of any mining operations, as he in the execution of his duty may think fit, but if they be of more than two pounds weight, or contain more than five grains of gold, or be taken more than once in three months, the Government shall pay for the same at a fair valuation.

189. Every person who wilfully obstructs an Inspector of Mines in the execution of his duty, and every Mining Proprietor, Agent or Superintendent, who refuses or neglects to furnish to an Inspector of Mines the means necessary for making any entry, inspection or enquiry, under the Mysore Mines Regulation, 1906, or these rules, shall be deemed to commit a breach of these rules.

190. An order by an Inspector of Mines suspending or postponing the operation of any of these rules or giving any permission under these rules shall not be valid unless it is in writing. Any such order may be subsequently revoked by an Inspector of Mines.

191. The Superintendent, or in his absence the highest Mining Officer who may be present, shall, upon application by any local Magistrate or Police Officer not below the rank of Chief Constable, whose duties require him to visit the mine, give him every facility for the purpose.

XX. Bribery and other undue influences.

192. Any person who shall render any service, or use any threat to any other person, with the view of preventing any workman, contractor, foreman, Mining Officer, Government servant, or other person engaged or expecting to be engaged in mining operations or in work connected with the Government inspection of mines from exactly complying with these rules, or from performing duly, honestly and without favour to any person or persons the duty he is employed to perform, or shall attempt or agree to render any such service, or use any such threat, or shall accept or attempt or agree to accept any such service, or shall on receiving any such threat fail to at once inform a Mining Officer thereof, shall be guilty of a breach of these rules.

193. Any workman, contractor, foreman, Mining Officer, Government servant or other person engaged or expecting to be engaged in mining operations, or in work connected with the Government inspection of mines, who shall accept any service from any person or persons who is concerned or is likely to be concerned in any operation, proceeding or business transacted or likely to be transacted by the person accepting such service, or having any other connection with the duties he or any person to whom he is subordinate, or likely to be subordinate, is employed to perform, or from any person who is interested in, or related to, the person so concerned or likely to be concerned, shall also be guilty of the breach of these rules.

194. For the purpose of these rules a service shall be considered to include the payment of any sum, the gift or sale without adequate consideration of any thing, and every other favour or gratification of any description, whether estimable in money or not; but not recognised and legitimate remuneration for mining work.

XXI. General Rules.

195. The working of the mine shall be under the general control and responsibility of the Superintendent.

196. The Superintendent or other Mining Officer acting under his instructions, shall, at least once in three days, while the men are at work, visit and examine

every working place in the mine and all machinery and other mining operations of every description below ground or on the surface, and shall see that safety in every respect is ensured.

197. Except under the provisions of these rules, no person shall enter a mine who has not previously obtained the consent of the Superintendent or his representative.

198. No person shall be allowed to enter a mine in an intoxicated condition, or if known to be subject to any complaint which might place his life in danger.

199. Unauthorized entrance into any shaft or other working or into any shed or enclosure or into any place where machinery or boilers or receivers are erected, or other mining operations are carried on, is prohibited, and notices to this effect must be posted up at all entrances.

200. No workman shall, except in cases of emergency, go to any part of the mine, except where it is necessary for him to go in the course of, or when coming to, or from, his work.

201. For the purpose of making these rules known to all persons in and about the mine, printed copies thereof must be posted in conspicuous places at the mine where they can be conveniently read, and every person employed in or about the mine is enjoined to thoroughly acquaint himself with them so far as they affect his duties.

202. All rules and notices shall be printed or written in such languages as an Inspector of Mines shall direct, and must be posted up in a position where they can be easily seen by persons frequenting the place.

203. All rules and notices posted in or about the mine must be authorized by the Superintendent.

204. Any person pulling down or otherwise defacing any rules or notice, when posted up, is liable to punishment.

205. In all cases where any person is required by these rules to make any report he shall sign his name to it. If he is unable to write, he shall be present when his report is written, and shall have it read over to him and shall attach his mark to such report in token of this having been done. The name of the person writing the report shall also be entered at the end of the report, together with a statement of its having been read over to the person on whose behalf it is written.

206. All persons are enjoined to thoroughly acquaint themselves with and carry out the sanitary arrangements in the mine which may from time to time be made by the Superintendent with the approval of the Medical Officer. Any person who does not conform to these arrangements shall be deemed to commit a breach of these rules.

207. Where the duties of more than one post are entrusted to the same person, that person shall be bound by, and observe, the rules attached to each such post.

208. No person shall depute any one to do his work without the sanction of his immediate superior.

209. No person shall wilfully damage, or without proper authority remove, or render useless any fence, fencing, manhole, place of refuge, casing, guide, signal or means of signalling, chain, flange, horn, brake, indicator, steam-gauge, watergauge, safety valve or other appliance or thing, which has been provided for the purpose of carrying out these rules, or for the safety of the workmen or otherwise for the purpose of properly carrying on mining operations, or which may be obtained or produced in the course of mining operations; nor is any one permitted to alter, remove, or in any way render useless any arrangement in the mine provided for the above purposes, without the consent of the Superintendent.

210. If any person employed in a mine shall, by any act or omission wilfully or negligently do anything which may allow or facilitate injury to, loss, destruction or theft of any property employed in or produced in the course of mining operations, he will be deemed to commit a breach of these rules.

211. Any person employed in or about the mine who shall, by any act of omission, wilfully or negligently do anything likely to endanger life, or shall

wilfully or in a careless or thoughtless manner expose himself to danger, will be deemed to be guilty of a breach of these rules.

212. Every person who shall forge or falsify a certificate granted under these rules, or use a certificate falsely purporting to be granted under these rules, or use a certificate granted under these rules as his own which was granted to another person, or shall sell or dispose of a certificate granted or falsely purporting to be granted under these rules, shall be guilty of a breach of these rules.

213. Fines and deductions from wages, other than fines levied under the Mysore Mines Regulation, 1906, shall be levied and made only by a Mining Officer.

214. No person shall refuse or neglect to obey any orders issued with a view to the safety or the convenience or proper discipline of the mine, not being inconsistent with these rules, by any person under whose orders he is placed, nor shall he interfere with, impede or obstruct any person in the discharge of his duties, or interfere with or obstruct the working of the Mine.

215. All workmen shall strictly adhere to these rules, and to any directions issued by the Superintendent with a view to their safety or convenience or the proper discipline of the mine, not being inconsistent with these rules, contained in the notices posted in or about the mine for the guidance of the workmen.

216. Any person who may observe or be aware of any neglect or infringement of these rules shall report the case to his immediate superior or to the Superintendent or an Underground Agent or other Mining Officer, or (if the person reporting the same is a workman) to an Underground Foreman or Timberman, so that immediate means may be taken to rectify it and to prosecute the offender.

217. Any one who shall knowingly permit any person over whom he exercises authority to commit, or shall otherwise abet, a breach of these rules, or shall observe or be aware of a breach thereof, without reporting the same as aforesaid, shall himself be deemed to commit a breach thereof.

218. Every person employed in mining operations (other than the Proprietor, Agent or Superintendent) who is wilfully or negligently guilty of any act or omission which in the case of a Proprietor, Agent or Superintendent would be a breach of rules, shall be deemed to commit a breach of these Rules.

219. All workmen who neglect to observe any of the provisions of these rules, may be suspended or discharged and ordered out of the mine by the Superintendent or other Mining Officer.

220. No person shall be selected or allowed to perform or shall perform any duty in connection with any mining operations unless he is fully competent and qualified to carry out the work allotted to him.

221. The Proprietor, Agent and Superintendent shall provide for the safety and proper discipline of the men employed above and below ground, and appoint such persons as may be necessary for carrying out the provisions of these rules, and, in the case of any contravention of or non-compliance with these rules by any person whatsoever, the Proprietor, Agent and Superintendent shall each, unless he proves that he has taken all reasonable means, by publishing and to the best of his power enforcing these rules, to prevent such contravention or non-compliance, be deemed to have committed a breach of these rules. It shall be the duty of the Superintendent to prosecute any person employed on the mine who is guilty of a breach of these rules, except in cases which are so trivial that a prosecution is inadvisable.

222. If there is anything in the construction of any mine which at the time of the issue of these rules is not in accordance with these provisions, the Inspector of Mines shall have power to postpone the operation of these rules in such cases for such period as he shall think fit.

By Order,
E. W. WETHERELL,
Offg. Secy. to Govt., Geol. Dept.

(SCHEDULE.)

Year *Accident No.*

REPORT OF ACCIDENT. (1).

Date of accident—
Class of accident (2)—
Number killed—
Number injured—
Name of mine—
Name of shaft—
Level (3)—
Locality (4)—
Time of accident (5)—

Persons killed—Names	Age	(6) Occupation	Hours worked before accident	Nature of injury causing death and date of death

Persons injured—Names	Age	(6) Occupation	Hours worked before accident	Nature of injury

How the accident happened—

Whether the work was being carried on by a contractor or by the Company (or mine-owners)—

Name of contractor and certificate No.—

Name and certificate No. of mestri or blaster, and if present—

Name of Foreman in charge of the safety of the part of the mine where the accident happened—

Name and title of Mining Officer in charge of that part of the mine—

Superintendent.

EXPLANATIONS.

(1) Every accident resulting in death or serious injury and every accident causing personal injury (whether serious or not) arising from an explosion of any kind, or from the fumes of an ignited explosive, or from the bursting of anything containing steam, compressed air or other substance at high pressure, must be reported.

An injury is to be considered as serious when it incapacitates the person injured from work for not less than seven days.

(2) Insert numbers corresponding to the following classes :—

1. Falls in mine.—Falls of hanging-wall.
2. Falls in mine.—Falls of sides or roof.
3. Falls in mine.—Falls of ore from working places.
4. In and at shafts.—Overwinding.
5. In and at shafts.—Ropes and chains breaking.
6. In and at shafts.—Whilst ascending or descending by machinery.
7. In and at shafts.—Falling into shaft from surface.
8. In and at shafts.—Falling from part way down.
9. In and at shafts.—Things falling from surface.
10. In and at shafts.—Things falling from part way down.
11. In and at shafts.—Miscellaneous.

(Winzes and rises are not to be considered shafts for the purpose of this report.)

12. Miscellaneous below ground.—Suffocation by gases.
13. Miscellaneous below ground.—Explosion due to misfire.
14. Miscellaneous below ground.—By explosives (other than misfires).
15. Miscellaneous below ground.—Falls of persons or things in Rises, Winzes and Stopes.
16. Miscellaneous below ground.—On inclined and engine planes. (Where the inclination of a shaft to the horizontal is not more than 30°, it is to be considered an incline for the purpose of this report.)
17. Miscellaneous below ground.—By trams or tubs, but not on inclined and engine planes.
18. Miscellaneous below ground.—By machinery.
19. Miscellaneous below ground.—By other causes.
20. On surface.—By machinery.
21. On surface.—Boilers and steam pipes bursting, etc.
22. On surface.—On railways, tramways, or aerial ropeways belonging to mine.
23. On surface.—Miscellaneous.

(3) If on surface, say so. All accidents on the surface works of the Company must be reported.

(4) If in stope, state which stope, and whether underhand or back stope. Also in what part of the stope.

(5) The twenty-four hours should be used as in railway time-tables.

(6) If the person is a female, the fact should be noted in this column in addition to her occupation.

This report, after being filled in and signed by the Superintendent or other superior officer of the mine at the foot of page 2, should be folded and despatched forthwith.

By Order,

E. W. WETHERELL,

Offg. Secy. to Govt., Geological Dept.